

T-5410

NREAD/DDS/th  
11330/2

19 MAY 1983

**From:** Commanding General  
**To:** Commanding Officer, Naval Regional Medical Center  
Camp Lejeune, North Carolina 28542 (Attn: Chief,  
Occupational and Preventive Medicine Service)  
**Subj:** Water Quality Monitoring and Related Environmental Health  
Considerations  
**Ref:** (a) Mtg btwn CMDR CAMPBELL and LT HENDERSON, NRMCM, and  
Mr. Sharpe, NREAD, on 6 Apr 1983  
**Encl:** (1) Guidelines for Water Quality Control Laboratory,  
Natural Resources and Environmental Affairs Division  
(NREAD), Support of the Occupational and Preventive  
Medicine Service Program

1. During the reference, the need for formalizing the working relationship between Occupational and Preventive Medicine Service (OPMS) and Water Quality Control Laboratory (WQCL), Natural Resources and Environmental Affairs Division (NREAD), Assistant Chief of Staff, Facilities, was discussed. The purpose of this memorandum is to establish an arrangement which ensures proper coordination of OPMS and NREAD programs in the subject area and timely relay of WQCL data to OPMS. Unless objected to by addressee, these procedures will become effective immediately.
2. Except as provided in paragraph 3 below, the WQCL is hereby authorized to perform laboratory support and to provide copies of related laboratory analysis to OPMS in accordance with procedures outlined in the enclosure. Attachment A to the enclosure provides quality control and other procedures to be followed relative to handling and processing samples. OPMS will ensure that only qualified persons take samples submitted for analysis in accordance with this memorandum.
3. Any request by OPMS for the sampling or analysis of a water sample from any location other than Marine Corps Base, Camp Lejeune; Marine Corps Air Station (H), New River; Outlying Field, Oak Grove; or Naval Regional Medical Center, Camp Lejeune, must be specifically approved by the Director, Natural Resources and Environmental Affairs Division, Assistant Chief of Staff, Facilities, Marine Corps Base. This restriction does not apply to samples collected under cognizance of OPMS from the potable water supply of military units on a field exercise outside the locations listed above.

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4. NREAD support to OPMS not specifically addressed by the enclosure should be requested in writing to the Commanding General, Marine Corps Base, (Attn: Assistant Chief of Staff, Facilities). Urgent requests should be made by telephone to 451-3034 and confirmed in writing as soon as possible.

5. Questions regarding this matter should be forwarded to Mr. Julian Wooten, Director, NREAD, at extension 5003. It is requested that a written response providing concurrence/nonconcurrence with the procedures contained herein be provided as soon as possible.

J. T. MARSHALL  
By direction

GUIDELINES FOR WATER QUALITY CONTROL LABORATORY (WQCL)  
 NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS DIVISION (NREAD)  
 SUPPORT OF THE OCCUPATIONAL AND PREVENTIVE MEDICINE  
 SERVICE PROGRAM (OPMS)

1. General. The purposes of these guidelines are to clarify NREAD responsibilities relative to support of the OPMS program; to formalize procedures required for timely, efficient response to public health requirements, and to ensure quality control standards are followed. Attachment A provides quality control standards to be followed during the collection and subsequent handling of samples prior to delivery to the WQCL. OPMS is responsible for ensuring that person(s) taking samples under OPMS cognizance are properly trained and follow correct procedures. WQCL will provide copies of data directly to OPMS. In addition, copies of all laboratory data provided to OPMS will be sent formally to the Commanding Officer, Naval Regional Medical Center via the chain-of-command.

2. Routine Laboratory Support. The WQCL will provide the following support to OPMS for any water sample collected aboard the installation or from a water supply used by troops during field exercises outside the installation. Requests for unusually large numbers of analysis are subject to availability of funds and personnel and should be coordinated by OPMS with WQCL in advance.

| <u>Test</u>                               | <u>Methods</u>                             | <u>Type Request/Comment</u><br>(See Note 1) |
|---|--|---|
| Coliform analysis<br>(Total and/or Fecal) | Most probable number<br>(MPN)              | See Note 2                                  |
|   | Membrane filter (MF)                       | "   |
| pH  | Electrometric                              | "   |
| Chlorine residual<br>(Free and/or Total)  | Amperometric Titrimetric; DPD Colorimetric | "   |
| Hardness as CaCO <sub>3</sub>             | EDTA Titrimetric                           | See Note 3                                  |
| Turbidity                                 | Nephelometric                              | "   |
| Fluoride                                  | SPADNS Colorimetric                        | "   |
|   | Ion Selective Electrode                    |   |
| Temperature                               | Thermometric                               | See Note 2                                  |
| Iron                                      | Atomic Absorption,<br>Direct Aspiration    | See Note 3                                  |
| Dissolved Oxygen                          | Membrane Electrode                         | "   |
|   | Modified Winkler                           | CLW   |
| Biochemical Oxygen Demand (BOD)           | 5-day BOD @ 20°C                           | 00000-04023                                 |

| <u>Test</u>  | <u>Methods</u>                    | <u>Type Request/Comment</u> |
|--|-----------------------------------|-----------------------------|
| Non-filterable residue<br>(Suspended Solids)                             | Gravimetric, Dried @<br>103-105°C | See Note 3                  |
| Oil and Grease   | Gravimetric, Extrac-<br>tion      | "                           |
| Collection of water<br>samples from MCAS(H),<br>New River, swimming area | GRAB                              | See Note 3                  |

Note 1: Requests requiring overtime must be approved by the Assistant Chief of Staff, Facilities, Marine Corps Base, Camp Lejeune, North Carolina.

Note 2: These tests/services will be run/provided and results provided directly to OPMS by WQCL at no cost. Samples will be gathered by OPMS and delivered to WQCL in the manner outlined in Attachment A.

Note 3: These tests will be run upon request to the supervisory ecologist, NREAD (extensions 5003/2083) and are subject to the availability of funds and personnel.

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QUALITY CONTROL CONSIDERATIONS

1. All samples will:
  - a. Be collected in WQCL furnished sample containers.
  - b. Be labeled with the following information:
    - (1) Date collected
    - (2) Time collected
    - (3) Collector's signature
    - (4) Sample location
    - (5) Test and method requested
  - c. Be hand delivered by a OPMS staff member to a WQCL staff member.
  - d. Be collected in accordance with WQCL schedule and sample holding times shown in paragraph 2 below.
  - e. If any of the above is not complied with, the sample will not be analyzed until WQCL obtains approval of the director, Natural Resources and Environmental Affairs Division or the supervisory ecologist.

2. Below is a table providing the necessary information for scheduling collection of samples for analysis by WQCL.

| Test              | Days Run   | Deadline Time See Note 1 | Max # Run | Hold-ing Time | Required Storage/Preservation See Note 2 | Lab Storage Capacity See Note 3 |
|-------------------|------------|--------------------------|-----------|---------------|--|---------------------------------|
| Coliform Analysis | M,W-F      | 1400                     | 20        | 30 hrs        | Cool                                     | 6                               |
| pH                | M-F        | 1500                     | 10        | 6 hrs         | See Note 4                               | None                            |
| Chlorine Residual | M-F        | 1500                     | 10        | None          | None                                     | None                            |
| Hardness          | M-F        | 1500                     | 5         | 6 mos         | Acid&Cool                                | 6                               |
| Turbidity         | M-F        | 1500                     | 10        | 7 days        | Cool                                     | 6                               |
| Temperature       | M-F        | 1500                     | 10        | None          | None                                     | None                            |
| Fluoride          | M-F        | 1400                     | 6         | 7 days        | None                                     | Unlimited                       |
| Iron              | M-F        | 1400                     | 4         | 6 mos         | Acid                                     | Unlimited                       |
| Dissolved Oxygen  | M-F        | 1200                     | 4         | 4-8 hrs       | See Note 5                               | See Note 5                      |
| BOD               | M, W-F     | 1200                     | 4         | 24 hrs        | Cool                                     | 6                               |
| Suspended Solids  | M-F        | 1200                     | 4         | 7 days        | Cool                                     | 6                               |
| Oil & Grease      | See Note 6 | 0900                     | 6         | 24 hrs        | Acid&Cool                                | 6                               |

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NOTES

Note 1: The deadline time is the time up to which samples will be accepted for same day processing. Otherwise samples will be accepted up to 1545 for storage until next day. Requests requiring overtime will require approval of the Assistant Chief of Staff, Facilities.

Note 2: Under "require storage/preservation" there are two terms and their definitions are as follows:

Cool - Sample must be refrigerated or stored on ice (Temperature 4°C).  
Acid - Sample must be treated with sufficient quantity of HNO<sub>3</sub> (Nitric Acid) to lower sample pH to 2 or below.

Note 3: Lab refrigeration space limited therefore as much prior notice as is possible of a need for storage should be given.

Note 4: pH is best taken when collected, however, not always possible. Sample should be kept close to temperature at collection.

Note 5: Dissolved oxygen samples have no holding time for the electrode method, however, if winkler is used, it can be held 4-8 hours after the chemicals are added.

Note 6: Oil and grease requires advance scheduling by WQCL.

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